

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Monzon  
Serial No.: 10/561,557  
Filed: 12/19/2005  
Examiner: Pico, Eric E.  
Group Art Unit: 3654  
Title: COMPACT BEDPLATE WITH INTEGRATED,  
ACCESSIBLE DEAD END HITCHES

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**SUPPLEMENTAL APPEAL BRIEF**

Dear Sir:

Subsequent to the filing of the Notice of Appeal on October 2, 2008, the filing of the original brief, and the Notice mailed 27 January 2009, appellant now submits its Supplemental Brief. The Appeal Brief fee was previously paid appellant's first appeal. Should any additional fees be due, you are hereby authorized to charge Deposit Account No. 50-1482 in the name of Carlson, Gaskey & Olds.

**Real Party in Interest**

The real party in interest in this application is Otis Elevator Company, the assignee of the entire right in the application. Ultimately, Otis Elevator Company is owned as a United Technologies Corporation company.

**Related Appeals and Interferences**

There are no prior or pending appeals, interferences or judicial proceedings relating to this appeal, which may directly affect or be directly affected by, or have a bearing on the Board's decision in this appeal.

**Status of Claims**

Claims 1-21 are pending, finally rejected, and are appealed.

**Status of Amendments**

There are no amendments after final rejection in this application.

**Summary of the Claimed Subject Matter****Independent Claim 1**

Independent claim 1 requires an elevator car (22) that is movable along car guide rails (42). A counterweight (28) is movable along counterweight guide rails (43). A bedplate (26) is supported by at least one of the car and counterweight guide rails. A machine (motor) (24) is supported by the bedplate and drives a tension member interconnecting the counterweight and the car. Opposed ends of the tension member are connected at dead end hinges (38a, b, c, and 40a, b, c). The bedplate has a vertically lowermost surface, and the dead end hinges extend above the vertically lowermost surface. In this manner, the dead end hinges are more easily accessible. The dead end hinges associated with each of the opposed ends of the tension member are received on the bedplate such that they will be between the car in a single wall when the elevator is mounted in an elevator shaft. (See page 2, lines 29 – page 3, line 30; Figures 1-3.)

**Independent Claim 11**

Independent claim 11 recites an elevator car (22) that is movable along guiderails (42). A counterweight (28) is movable along counterweight guide rails (43). A bedplate (26) is supported by at least one of the car and the counterweight guide rails. A machine (motor) (24) is supported by the bedplate and drives a plurality of tension members (Figure 2) interconnecting the counterweight

to the car. Opposed ends of the tension members are connected at dead end hitches (38a, b, c, and 40a, b, c). There are two sets of aligned dead end hitches. Each set of dead end hitches is supported by the bedplate in an array that is generally parallel to a rotational axis of the machine. The dead end hitches associated with each of the opposed ends of the tension members are received on the bedplate such that they will be between the car and a single wall when the elevator is mounted in an elevator shaft. (See page 3, line 18 to page 5, line 4, and Figures 3 or 4.)

#### Independent Claim 16

Independent claim 16 recites an elevator car (22) movable along car guide rails (42). A counterweight (28) is movable along counterweight guide rails (43). A bedplate (26) is supported by at least one of the cars and the counterweight guide rails. A machine (motor) (24) is supported by the bedplate and comprises a traction sheave (30) for engaging and driving a plurality of tension members interconnecting the counterweight to the car. Opposed ends of the tension members are connected via dead end hitches to the bedplate (38a, b, c, and 40a, b, c).

The traction sheave has a plurality of sheave surfaces (30a, b, c) corresponding to the plurality of tension members. Each of the sheave surfaces is axially aligned with a respective pair of the dead end hitches such that a line drawn through one of the sheave surfaces and its two associated dead end hitches is perpendicular to a rotational axis of the traction sheave. The dead end hitches associated with each of the opposed ends of the tension members are received on the bedplate such that they will be between said car and a single wall when the elevator is mounted within an elevator shaft. (See page 4, lines 8-32, and Figures 2, 3, and 4.)

#### Grounds of Rejection to be Reviewed on Appeal

- I. The 35 U.S.C. §103 rejection of claims 1, 2, and 4-20 as being unpatentable over Orrman, et al. in view of Nakagaki, et al. is appealed.
- II. The rejection of claims 3 and 21 under 35 U.S.C. §103 over Orrman, et al. taken with Nakagaki, et al., and then further with Ando is appealed.

## **Arguments**

### **I. The Rejection of Claim 1 is Improper**

Claim 1 requires that the dead end hitches be above a lowermost surface of the bedplate.

A major benefit of Appellant's invention is the claimed placement of the dead end hitches, and makes the dead end hitches much more accessible. In general, the field of this invention is an elevator wherein the bedplate, and hence the machine, is between the elevator car and the wall. Historically, there was a machine room above the elevator car. Once the machine was moved into the space between the car and the wall, the machine, and the hitches, become less accessible. Thus, Appellant's placement of the dead end hitches above the lowermost surface of the bedplate provides a beneficial arrangement in which the dead end hitches are much more accessible.

The Examiner proposes to reject these claims over Orrman, et al. taken with Nakagaki, et al.

Orrman, et al. shows dead end hitches beneath an element 17 which is styled a "bedplate" by the Examiner.

Next, the Examiner looks to the Nakagaki, et al. reference and argues that the dead end hitches 57 and 67 are above the "bedplate" 33 and thus would suggest modifying Orrman, et al.

However, the dead end hitches 57 and 67 are not positioned on the bedplate at all, but are on the remote side of the car from the bedplate. The dead end hitches 57 and 67 are mounted to the underside of an element 25 which is connected to a brace 24, which thus places the dead end hitches 57 and 67 on the opposed side of the car.

There is nothing within Nakagaki, et al. that would suggest modifying Orrman, et al. such that the dead end hitches were positioned vertically above the element 33, and yet still "between the car and a single wall" as is required by the claim 1. That is, somehow, Orrman, et al. must be modified by Nakagaki, et al. such that the dead end hitches are not only above the element 17, but also on the same side as the other dead end hitch. Within Nakagaki, et al., there is one dead end hitch 53 on the same side as the machine, and the opposed (57/67) on the opposed side of the car.

Under any fair interpretation of the claim and these references, there would be no reason to modify Orrman, et al. as would be required.

In addition, what Nakagaki, et al. actually does is connect its remote dead end hinges 57/67 to the under side of its support element 25. Certainly there would be no reason to provide an additional frame element above the element 17 of Orrman, et al. and then mount dead end hinges to that element. Instead, if Nakagaki, et al. suggests anything, it would be mounting a second dead end hinges beneath the structure 17. Orrman, et al. already does so.

Simply, there is no reason to modify these references as would be required to reject claim 1. The rejection should be reversed.

II. The Rejection of Claim 2 is Separately Improper

Claim 2 requires that the dead end hinges all be mounted upon the bedplate. While this may well be implied by claim 1, to the extent an argument is made that claim 1 does not specifically require mounting on the bedplate, claim 2 certainly does, and the rejection is improper for this additional reason.

III. The Rejection of Claims 3 and 21 is Improper

These claims require that the dead end hinges be mounted on the vertically uppermost surface of the bedplate. This arrangement is shown for example in Figures 3, 4, 5a or 5b.

The examiner argues that the Ando reference shows dead end hinges mounted atop a surface. However, this is not a surface as is required by the claims, or as is shown by Orrman, et al. wherein a mount element is positioned between the car and the wall and on the bedplate. There is nothing within Ando that would suggest the claimed positioning. In fact, once the machine and bedplate are positioned between the car and the opposed wall, space becomes at an extreme premium atop the bedplate. There is no reason within any of these references to so modify Orrman, et al. Simply, these rejections are wrong for these additional reasons.

IV. The Rejection of Claim 4 is Improper

Claim 4 recites the embodiment such as shown in Figure 6 wherein the bedplate is C-shaped and both dead end hinges are mounted within the interior of the C-shape. The Examiner points to the Figure 2 of Orrman, et al. that does show a dead end hitch within the interior of an H-

shaped channel. However, both dead end hitches must be within this interior, and thus this claim is not met for this additional reason.

IV. The Rejection of Claim 6 is Improper

Claim 6 requires that there be a plurality of tension members with two sets of corresponding dead end hitches, and the dead end hitches of each of the two sets are aligned in an array that is generally parallel to a rotational axis of the machine. The Examiner argues that Nakagaki, et al. does disclose parallel tension members.

It is not appellant's contention that it has invented the concept of plural tension members, nor plural dead end hitches. However, to support the Examiner's rejection, it must have been obvious to so modify Orrman, et al. Orrman, et al. has an arrangement wherein a machine and its sheaves are all positioned to extend perpendicularly between the surface of the wall and the car. To arrange the dead end hitches, and the redundant tension members such that they would be parallel to the machine axis would require there to be additional redundant structure extending between the car and the wall. Since an obvious goal of Orrman, et al. is to minimize this space, it would destroy Orrman, et al. to do so. As an example, see paragraph 6 of Orrman, et al. which highlights its main feature of ensuring an elevator is as compact as possible. Simply, this rejection is supported only by hindsight.

V. The Rejection of Claim 7 is Separately Improper

Claim 7 requires that the dead end hitch sets be on opposed lateral sides of the rotational axis of the machine.

To reach this rejection, the Examiner must modify Orrman, et al. such that there are dead end hitches on both sides of its machine. This would dramatically increase the required space. Again, Orrman, et al. has a main goal of decreasing the required space, and thus this rejection is improper.

VI. The Rejection of Claim 10 is Separately Improper

Claim 10 requires that the machine comprises a traction sheave having a plurality of sheave surfaces for engaging and driving a plurality of tension members, and that opposed ends of the tension members are connected at a pair of dead end hitches, and each of the sheave surfaces is aligned with a respective pair of the dead end hitches such that a line drawn through one of the sheave surfaces and its two associated dead end hitches is perpendicular to a rotational axis of the traction sheave.

Again, to modify Orrman, et al. to meet this claim is not suggested at all by Nakagaki, et al., which does not even have dead end hitches on the same side of the car. Moreover, to place the redundant structure within the Orrman, et al. device would dramatically increase the required size. Finally, nothing within either reference discloses the arrangement of sheave surfaces and dead end hitches. This claim is allowable for all of these reasons.

VII. The Rejection of Claim 11 is Improper

Independent claim 11 includes limitations such as those found in claim 6. It is allowable for all of the reasons set forth above with regard to claim 6.

VIII. The Rejection of Claim 12 is Improper

Dependent claim 12 is allowable for all of the reasons set forth above with regard to dependent claim 7.

IX. The Rejection of Claim 14 is Improper

Dependent claim 14 includes limitations such as those found in dependent claim 10. This claim is allowable for the reasons set forth above with regard to claim 10.

X. The Rejection of Claim 16 is Improper

Independent claim 16 includes limitations similar to those found in claim 10. It is allowable for the reasons set forth above with regard to claim 10.

XI. The Rejection of Claim 20 is Improper

Dependent claim 20 is dependent to claim 16, and includes limitations similar to those found in claim 7. This claim is allowable for these additional reasons.

**CLOSING**

For the reasons set forth above, the reversal of the rejection and allowance of all claims is in order. Such action is solicited.

Respectfully submitted,

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Dated: February 16, 2009



**CLAIM APPENDIX**

1. An elevator comprising:  
an elevator car movable along car guide rails;  
a counterweight movable along counterweight guide rails;  
a bedplate supported by at least one of said car and counterweight guide rails; and  
a machine supported by said bedplate and driving a tension member interconnecting said counterweight and said car, opposed ends of said tension member being connected at dead end hitches, said bedplate having a vertically lowermost surface, and said dead end hitches extending above said vertically lowermost surface, said dead end hitches associated with each of said opposed ends of said tension members being received on said bedplate and such that they will be between said car and a single wall when the elevator is mounted within an elevator shaft.
2. The elevator as set forth in Claim 1, wherein said dead end hitches are mounted on said bedplate.
3. The elevator as set forth in Claim 2, wherein said bedplate is formed by at least one beam, and said dead end hitches are supported by a vertical uppermost portion of said beam.
4. The elevator as set forth in Claim 2, wherein said bedplate is formed by a pair of C-shaped beams each having an internal space and at least one of said dead end hitches is positioned within said internal space.
5. The elevator as set forth in Claim 1, wherein said bedplate is supported by both of said car and counterweight guide rails.
6. The elevator as set forth in Claim 1, wherein there are a plurality of said tension members and two sets of a corresponding plurality of dead end hitches, said dead end hitches of each of the two sets being aligned in an array that is generally parallel to a rotational axis of said machine.

7. The elevator as set forth in Claim 6, wherein each of said sets of dead end hitches is disposed on opposed lateral sides of said rotational axis of said machine.

8. The elevator as set forth in Claim 6, wherein said machine comprises a traction sheave having a plurality of sheave surfaces for engaging and driving the plurality of tension members, and said dead end hitches are disposed within an axial distance defined by ends of the traction sheave.

9. The elevator as set forth in Claim 8, wherein each of said sheave surfaces is aligned with a respective one of said dead end hitches in each of said sets of dead end hitches such that a line drawn through one of the sheave surfaces and its two associated dead end hitches is perpendicular to said rotational axis.

10. The elevator as set forth in Claim 1, wherein said machine comprises a traction sheave having a plurality of sheave surfaces for engaging and driving a plurality of said tension members, the opposed ends of each of said tension members being connected at a pair of the dead end hitches, wherein each of said sheave surfaces is aligned with a respective pair of the dead end hitches such that a line drawn through one of the sheave surfaces and its two associated dead end hitches is perpendicular to a rotational axis of the traction sheave.

11. An elevator comprising:  
an elevator car movable along car guide rails;  
a counterweight movable along counterweight guide rails;  
a bedplate supported by at least one of said car and counterweight guide rails; and  
a machine supported by the bedplate and driving a plurality of tension members interconnecting said counterweight to said car, opposed ends of said tension members being connected at dead end hitches, there being two sets of aligned dead end hitches, each set of dead end hitches being supported by the bedplate in an array that is generally parallel to a rotational axis of said machine, said dead end hitches associated with each of said opposed ends of said

tension members being received on said bedplate and such that they will be between said car and a single wall when the elevator is mounted within an elevator shaft.

12. The elevator as set forth in Claim 11, wherein each of said sets of dead end hitches is disposed on opposed lateral sides of said rotational axis of said machine.

13. The elevator as set forth in Claim 11, wherein said machine comprises a traction sheave having a plurality of sheave surfaces for engaging and driving the plurality of tension members, and said dead end hitches are disposed within an axial distance defined by ends of the traction sheave.

14. The elevator as set forth in Claim 13, wherein each of said sheave surfaces is aligned with a respective one of said dead end hitch in each of said sets of dead end hitches such that a line drawn through one of the sheave surfaces and its two associated dead end hitches is perpendicular to said rotational axis.

15. The elevator according to claim 11, wherein the bedplate is supported by both of the car and counterweight guide rails.

16. An elevator comprising:  
an elevator car movable along car guide rails;  
a counterweight movable along counterweight guide rails;  
a bedplate supported by at least one of said car and counterweight guide rails; and  
a machine supported by the bedplate and comprising a traction sheave for engaging and driving a plurality of tension members interconnecting said counterweight to said car, opposed ends of said tension members being connected via dead end hitches to said bedplate,  
the traction sheave having a plurality of sheave surfaces corresponding to the plurality of tension members, wherein each of said sheave surfaces is axially aligned with a respective pair of the dead end hitches such that a line drawn through one of the sheave surfaces and its two

associated dead end hitches is perpendicular to a rotational axis of the traction sheave, said dead end hitches associated with each of said opposed ends of said tension member being received on said bedplate and such that they will be between said car and a single wall when the elevator is mounted within an elevator shaft.

17. The elevator according to claim 16, wherein the bedplate is supported by both of the car and counterweight guide rails.

18. The elevator as set forth in claim 8, wherein a dead end hitch associated with one of said opposed ends of said tension members being on a first side of a rotational axis of said traction sheave, and a dead end hitch associated with the other of said opposed ends of the tension members being on an opposed side of the rotational axis of the traction sheave.

19. The elevator as set forth in claim 13, wherein a dead end hitch associated with one of said opposed ends of said tension members being on a first side of a rotational axis of said traction sheave, and a dead end hitch associated with the other of said opposed ends of the tension members being on an opposed side of the rotational axis of the traction sheave.

20. The elevator as set forth in claim 16, wherein a dead end hitch associated with one of said opposed ends of said tension members being on a first side of a rotational axis of said traction sheave, and a dead end hitch associated with the other of said opposed ends of the tension members being on an opposed side of the rotational axis of the traction sheave.

21. The elevator as set forth in claim 2, wherein said dead end hitches are supported by a vertical uppermost portion of said bedplate.

## **EVIDENCE APPENDIX**

None.

**RELATED PROCEEDINGS APPENDIX**

None.